Fusion3

F200 3D Printer

REPAIR:
BED PROBE CABLE REPLACEMENT

Revision 8/12/2025

REPLACING THE BED PROBE WIRE

If your bed probe wire (the flexible wire that moves up and down) becomes broken, damaged, or bent and you need to replace it, follow these instructions.

BEFORE YOU BEGIN

Your printer should be off and cold.

Unload filament.

Your printer should be unplugged.

Estimated repair time: 30-60 minutes.

Repair difficulty: Moderate to advanced

Tools required:

- Torx T10 driver
- 2.5mm hex drive (ball and straight end)
- 1.5mm hex drive
- "Black stick" aka non-metallic poking stick

Extra parts required:

- 13x M3x6 SHCS
- Replacement bed probe wire assembly

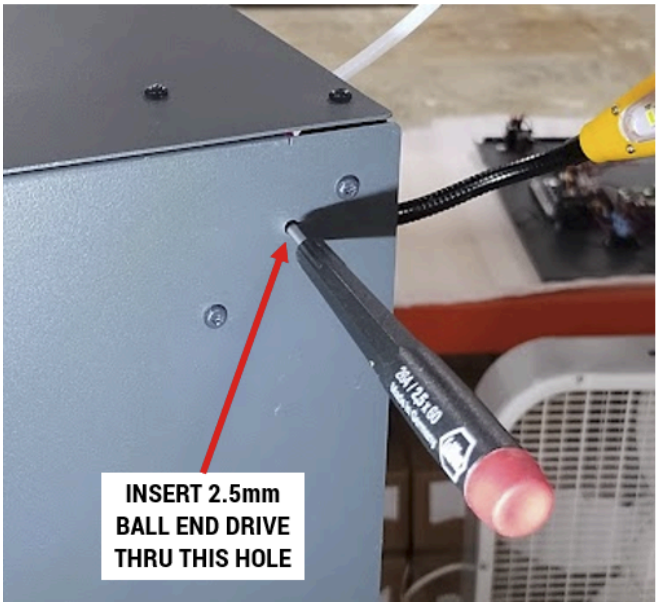
WARNING: The end of the bed probe wire is very sharp and has a tendency to "whip" since the wire behaves like a spring. Wear eye protection when handling and installing the bed probe wire, until both ends are securely mounted in the printer.

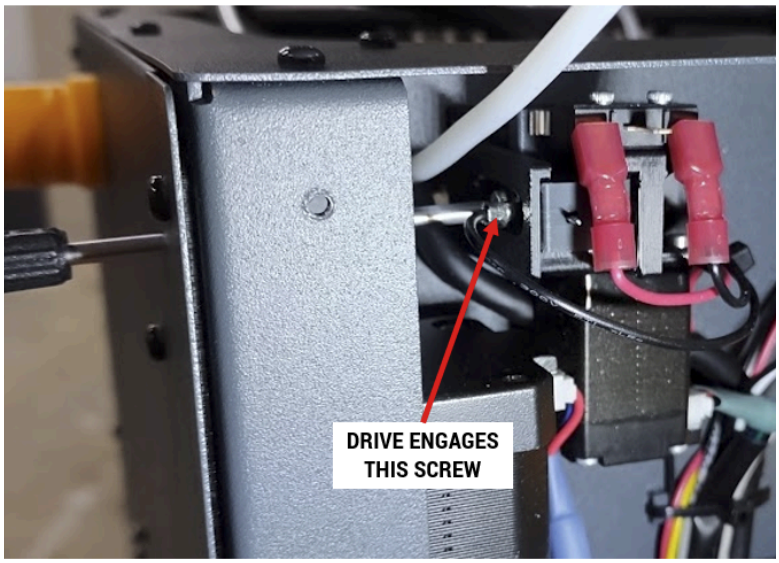
NOTE: Some of these pictures were taken on a pre-production printer and your printer will look slightly different.

REMOVAL

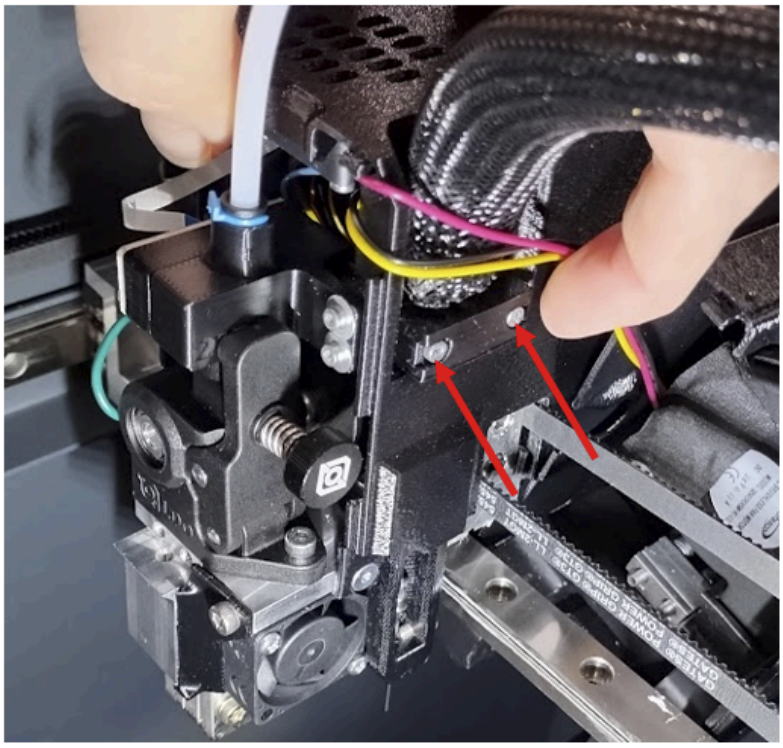
1. Remove the rear panel from the printer by following THESE INSTRUCTIONS.
2. Remove the top window and set it aside.
3. Remove the front toolhead housing by following THESE INSTRUCTIONS.
4. On the bed probe motor assembly, loosen the wire locking screw.

It is NOT NECESSARY to remove the side panel from the printer and we STRONGLY recommend you DO NOT remove this panel.

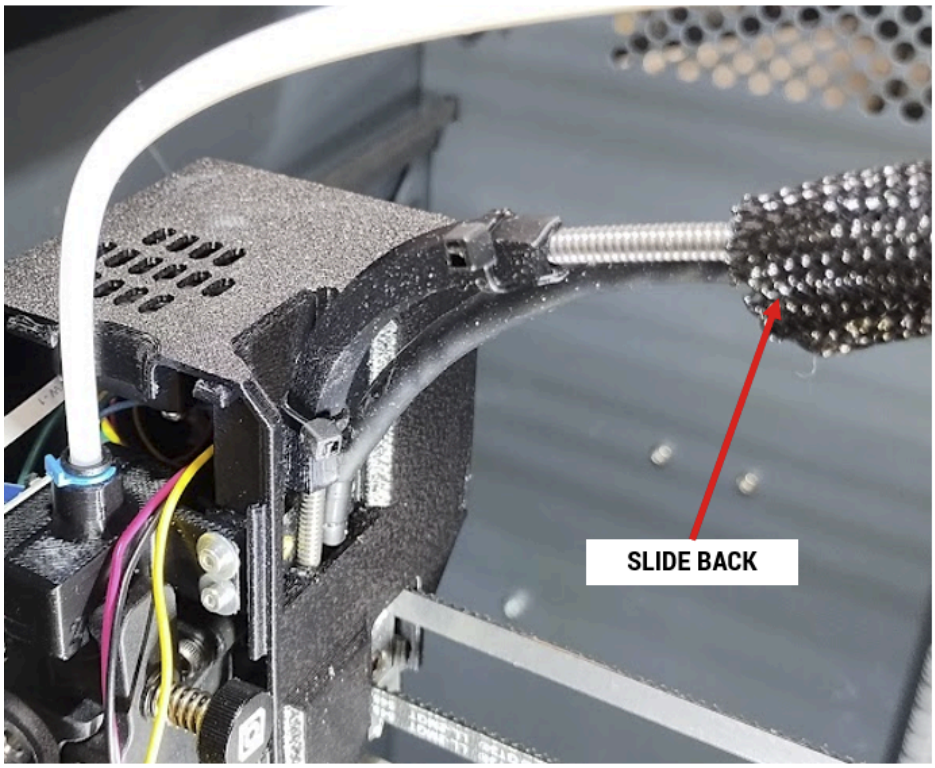




5. On the toolhead, loosen the (2) clamp bolts on the right side and remove the clamp.



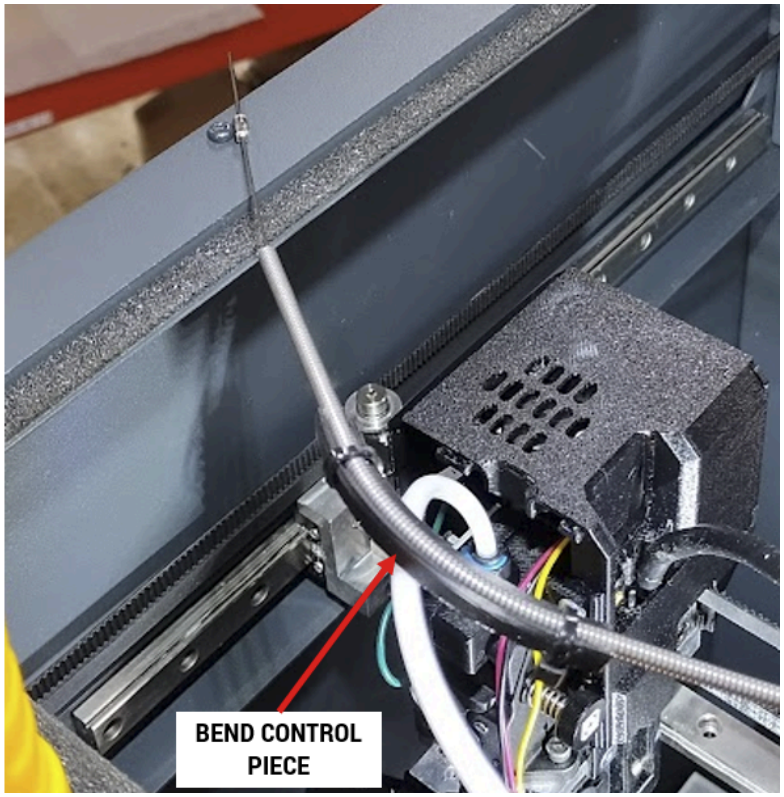
6. Slide the mesh sleeve back so that you can manipulate the spiral wound sleeve separately from the electrical wires as they lead into the toolhead. Your goal is to be able to slide the spiral sleeve back ~3 inches while disturbing the electrical wires as little as possible.



7. Slide the spiral sleeve up and back so that the end comes free of the toolhead. Depending on the condition of your bed probe wire, you may have to work this out of the toolhead at the same time.

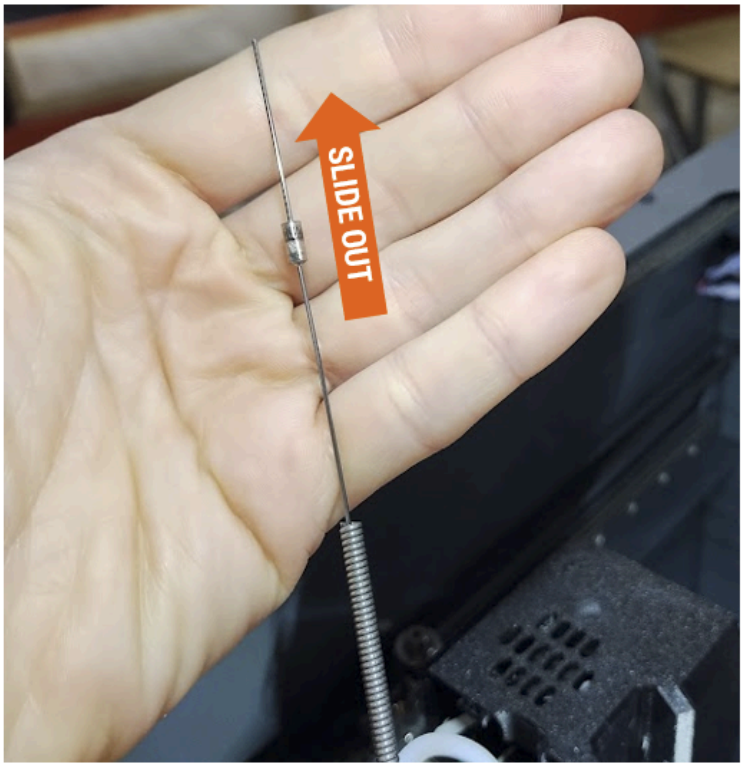
    a. The crimped-on collar is a tight fit through the various holes in the top of the bed probe body and toolhead but it DOES fit without taking anything else apart.

    b. You should not need to move the zip-tied-on bend control piece. Try not to move this as its position is critical - both its position along the axis of the spiral sleeve and its rotational position.



8. If your BP wire is broken, now is the time to make sure you have the entire length removed from the spiral sleeve. You can use the new BP wire, or a length of solid core electrical wire, to remove it.

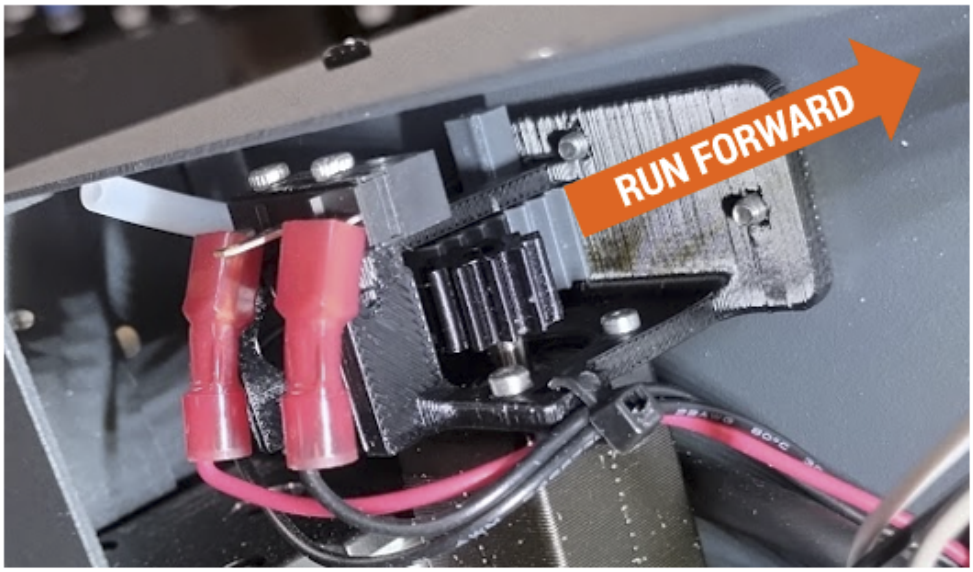
9. Once you have the spiral sleeve AND the bed probe wire free of the toolhead, slide it completely out of the sleeve.



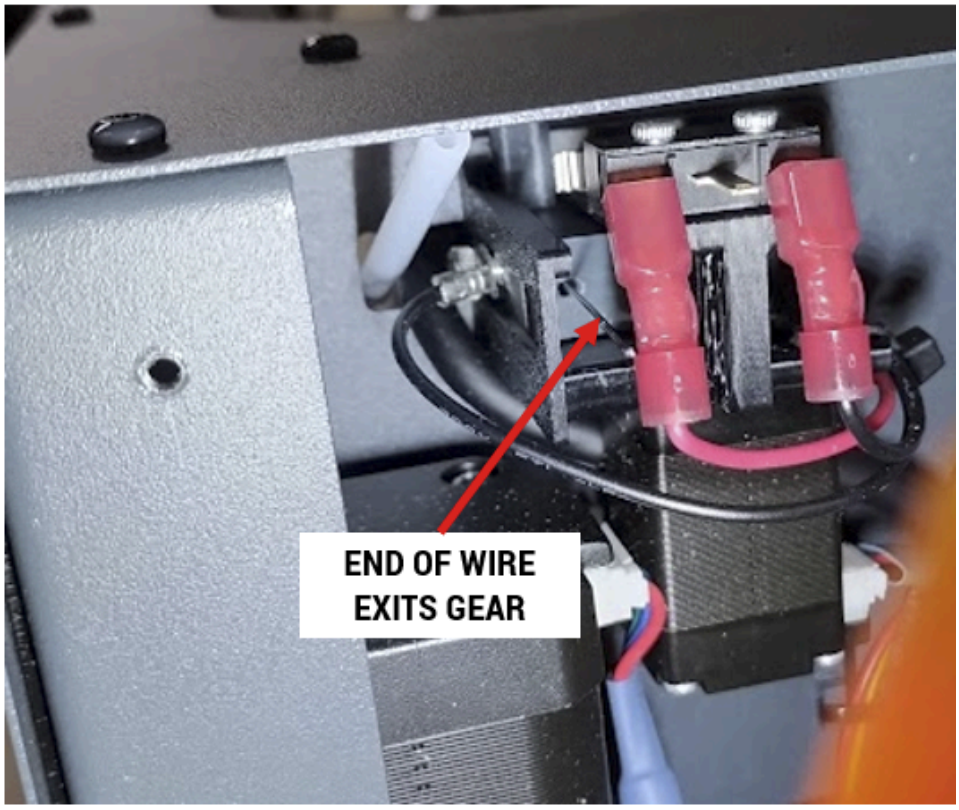
INSTALLATION OF NEW WIRE

1. Slide the end of your new bed probe wire that doesn't have the crimped-on collar into the spiral sleeve.
2. As the end of the wire exits the sleeve at the bed probe motor, you'll feel it stop as it runs into the front face of the gear.

3. Back the BP wire up slightly and move the BP motor forward to the deployed position with your finger.



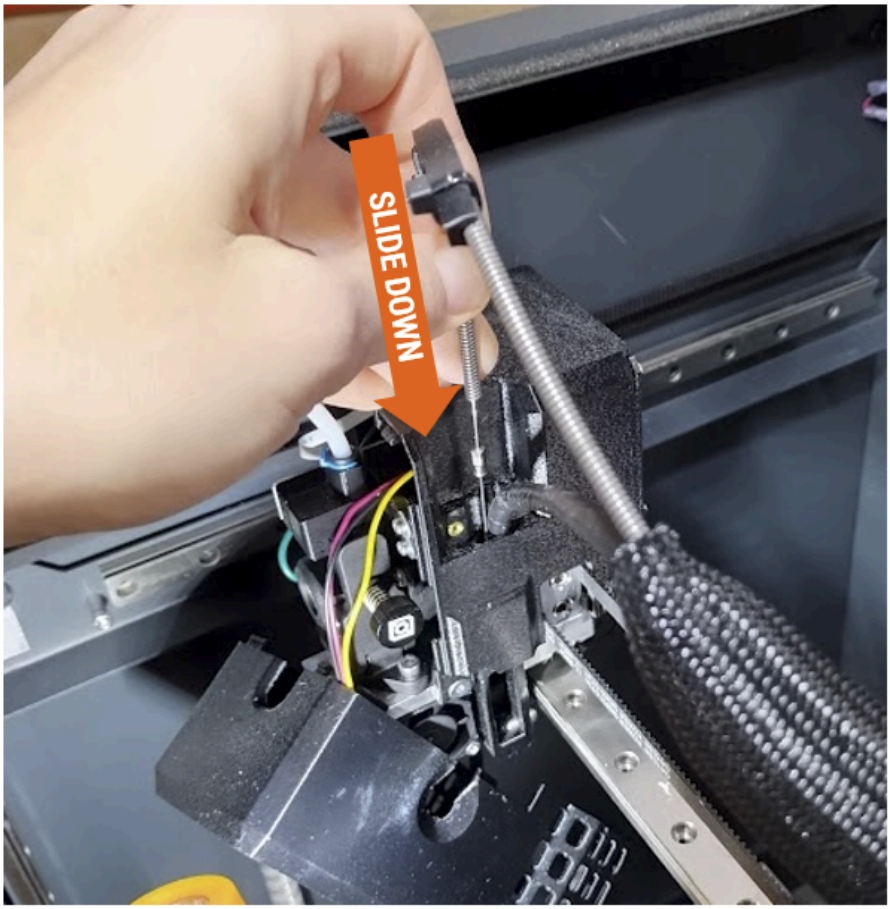
4. Carefully fish the end of the BP wire around until you see/feel it slide through the gear.

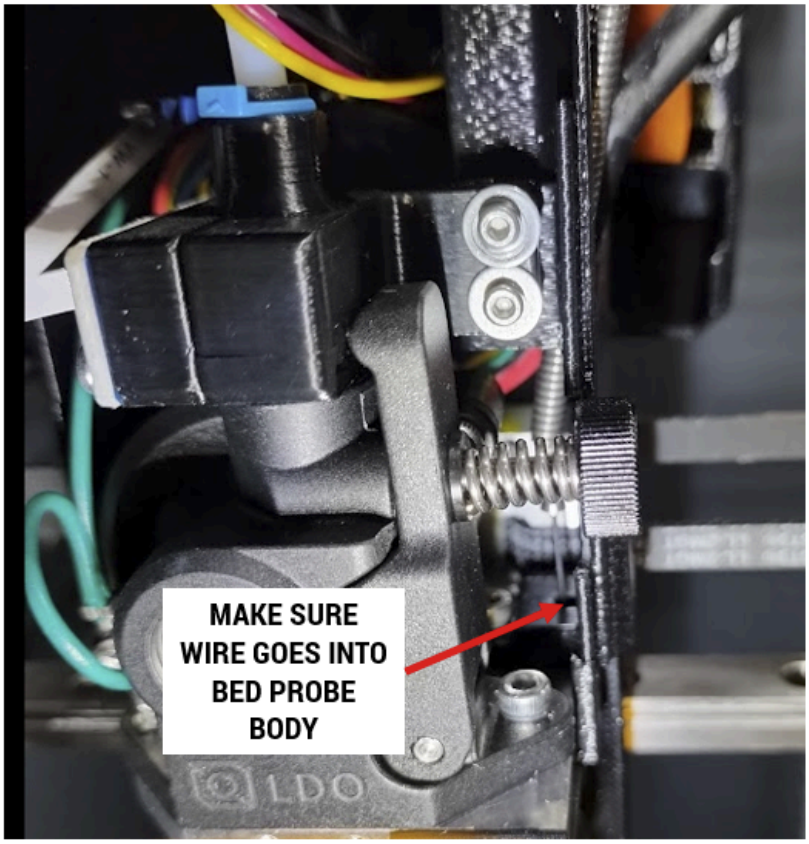


5. Tighten the BP wire capture screw slightly so that it can't slide back out of the gear. Once you install the collar end in the toolhead, getting the free end back through the gear if it comes out is a pain.

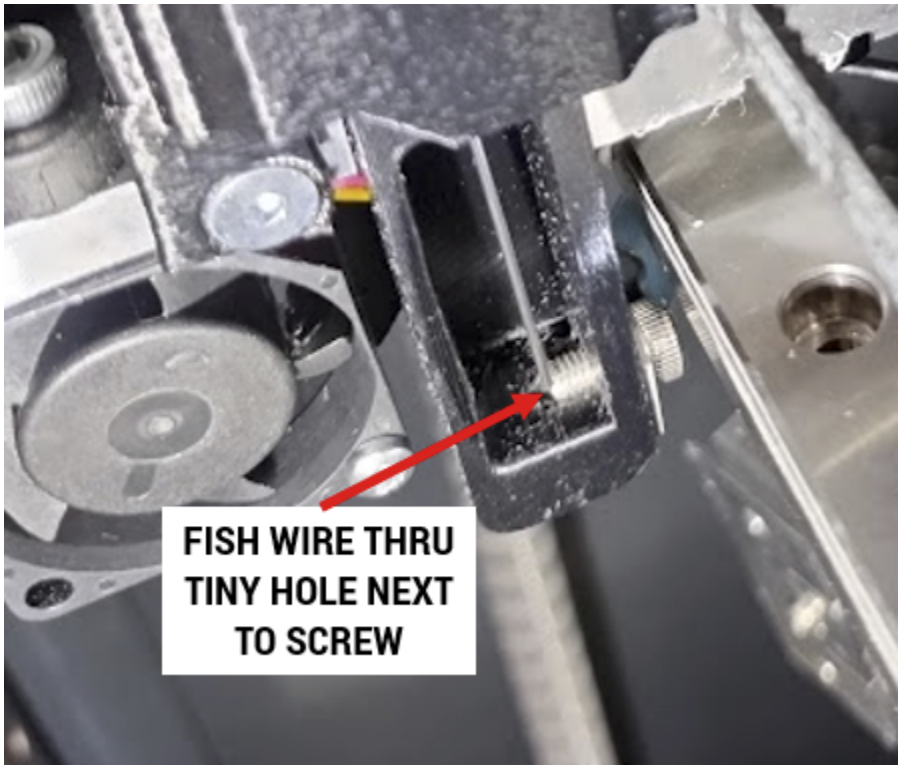
See THIS VIDEO for what it should look like at this point.

6. Install the spiral sleeve + BP wire into the toolhead. Make sure you don't catch the tip of the wire on anything and bend it.

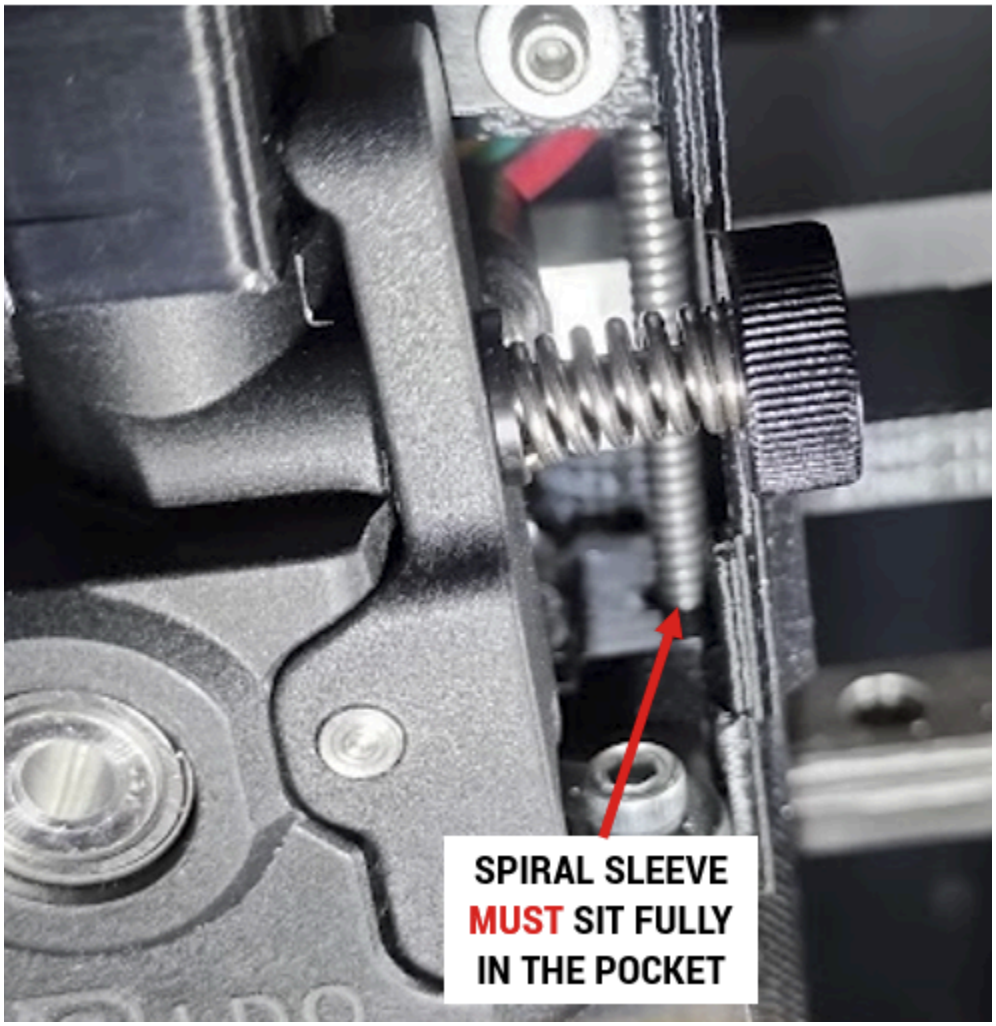




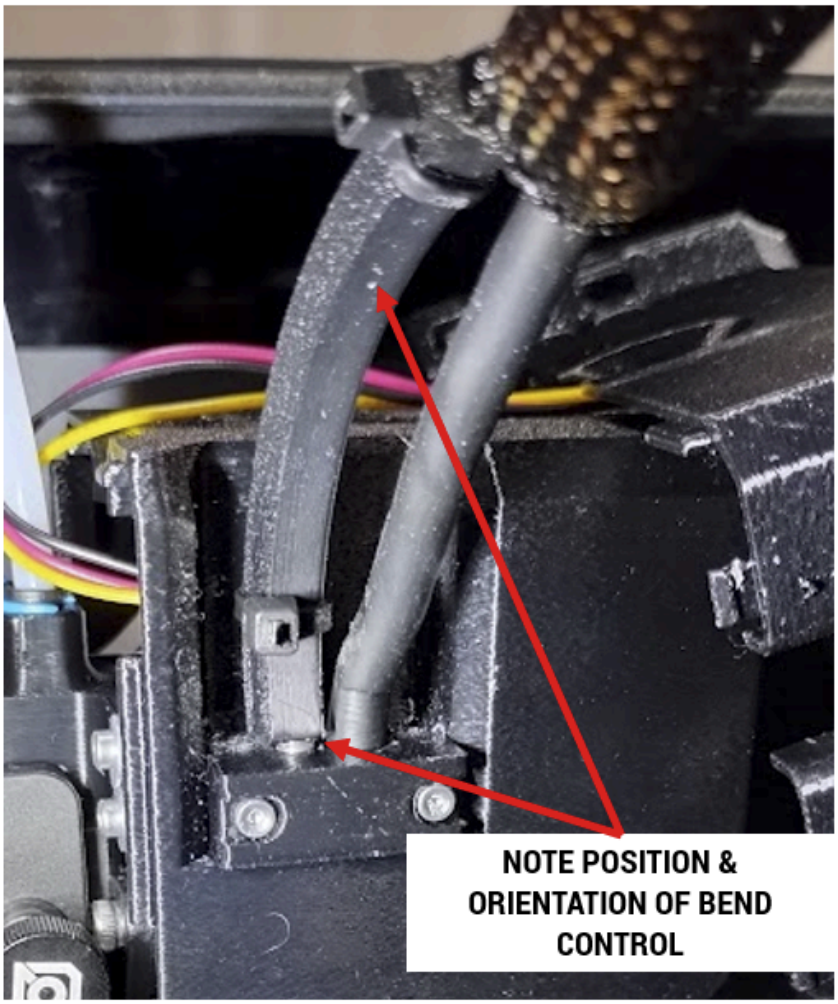
7. When the end of the BP wire hits the floor of the bed probe body, gently fish it around until it drops through the very small hole in the bottom



8. Make sure the spiral sleeve is fully installed. The end should drop into a shallow ~1mm deep pocket in the top of the bed probe body.



9. Install the clamp. Hold the spiral sleeve in position while you tighten it. Check the position of the wires and bent control piece - reference the pictures below.



10. Slide the mesh sleeve back into place.

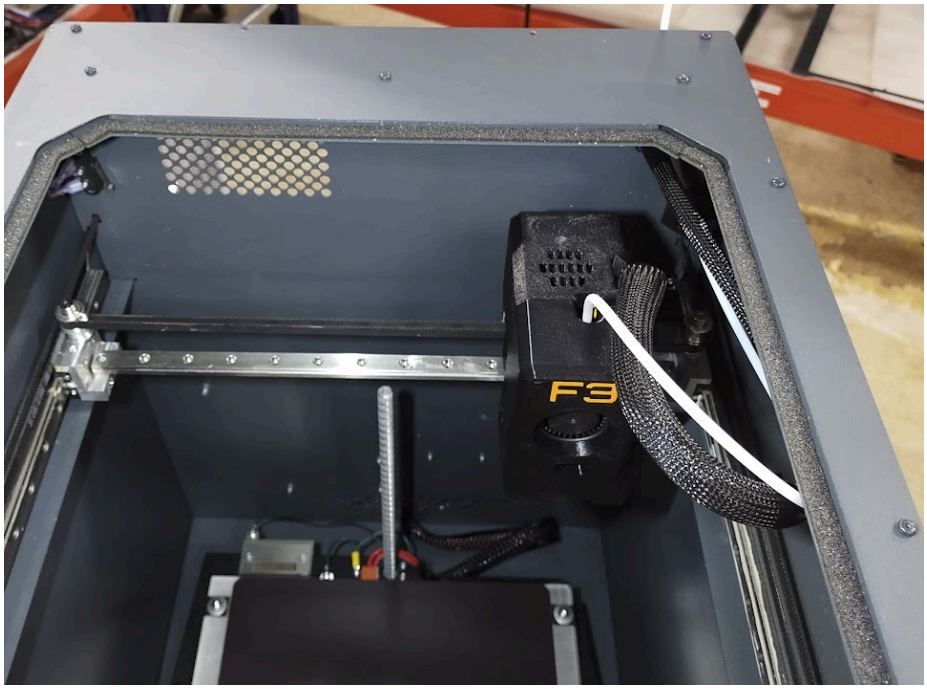
11. Reinstall the front toolhead housing. See THESE INSTRUCTIONS for further details.

ADJUSTING THE NEW BED PROBE WIRE

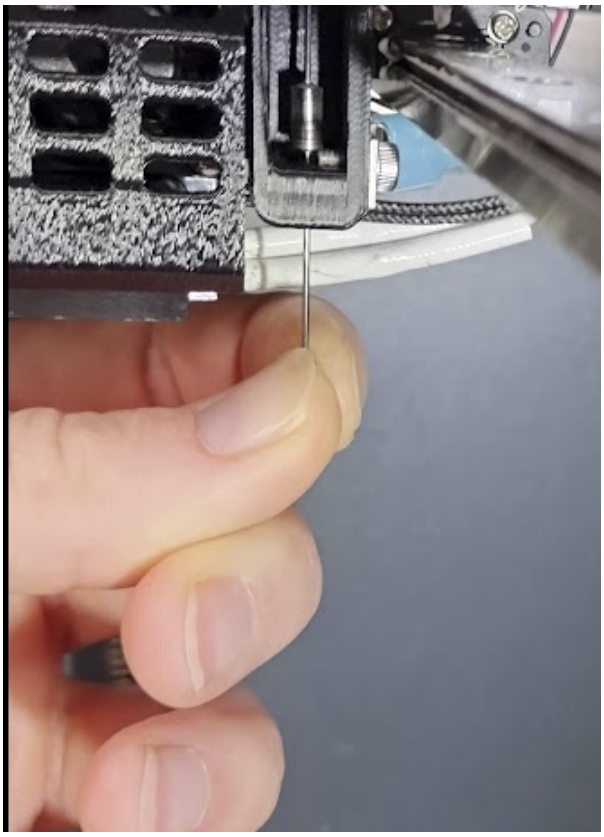
This process is critical to proper functioning of the bed probe system. Follow these steps carefully.

Some people find this easier with two people.

1. Position the toolhead in the rear right corner. It doesn't have to be hard against the mechanical stops but should be within 1.5" of the corner.

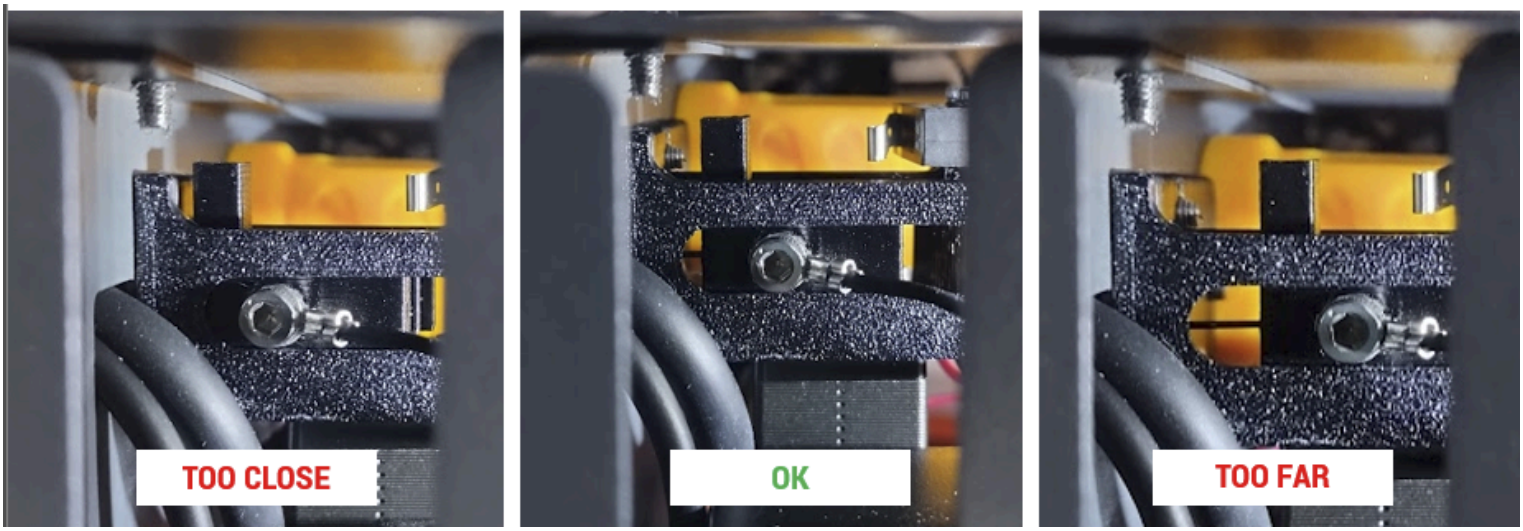


2. On the bed probe motor assembly, loosen the BP wire locking screw so that you can slide the bed probe wire independently of the gear motion.
3. Using your fingers, at the toolhead **gently** pull the BP wire down to the deployed position and hold it there.



4. Using a 2.5mm ball end hex drive, manipulate the position of the gear so that the end is approx 3-4mm from the fully forward position.

NOTE: Some of the following pictures were taken on a printer without side panels installed, so that the position of the gear is more clear.

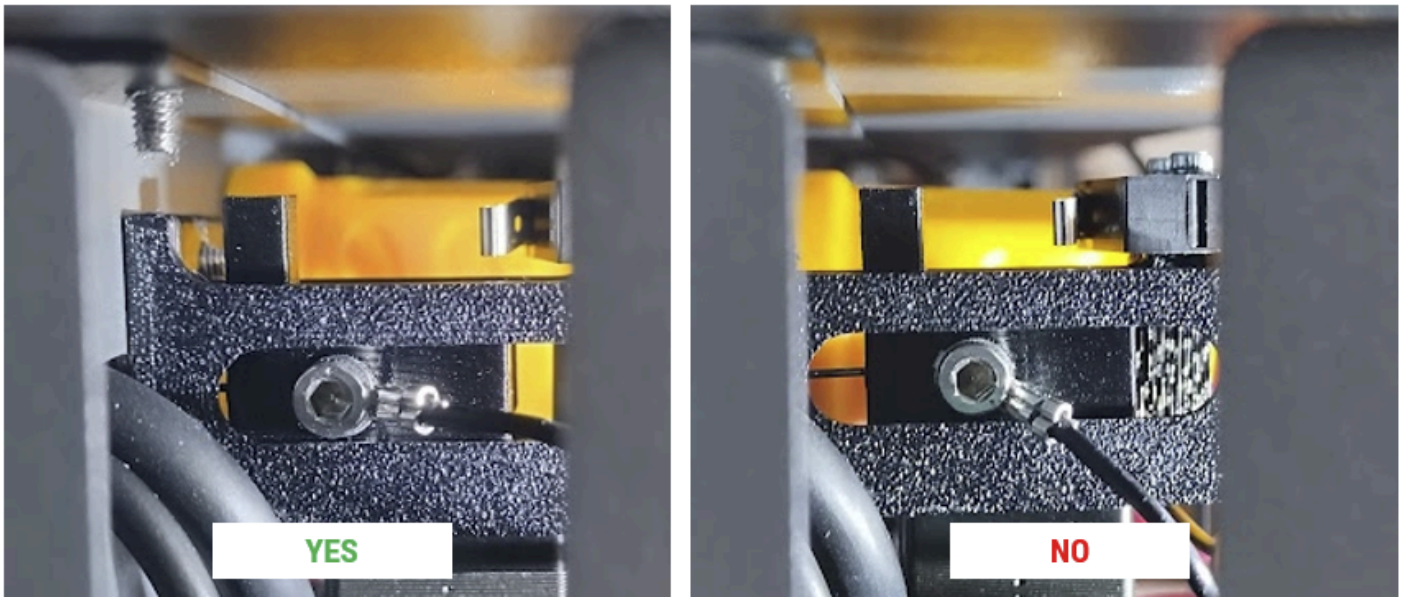


These pictures were taken from the outside looking in, with the outer skin not installed.

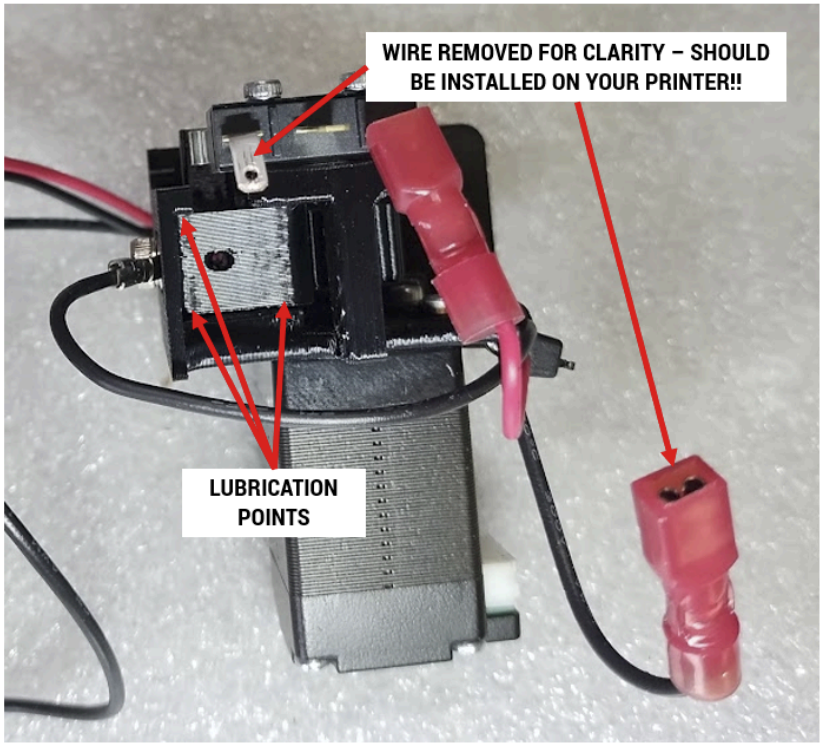
5. Tighten the BP wire locking screw so that it retains the wire, but is not fully tight. The electrical wire ring terminal should still have some wiggle.
6. Run the BP motor gear back and forth by hand to make sure the collar can reach the fully deployed stop before the gear runs out of travel. Loosen the locking screw and adjust as needed to achieve the necessary overtravel margin.

   See THIS VIDEO for what it should look like at this point.

7. Once you're satisfied with the position of the gear, tighten the locking screw until the electrical wire ring terminal is no longer free to rotate.
   a. Make sure the ring terminal points straight back so that it does not cause drag.



8. If it's available, add a few drops of a lightweight lubricant such as Triflow to the gear's slide.



9. Proceed to the TESTING section before installing the rear panel.

TESTING

1. Connect the power cord and power on. You may need to reconnect the filter fan if the print head, bed, or chamber is warm, to avoid fan errors.
2. Go to the *Control* screen. Press "Deploy" and "Retract". Make sure the bed probe moves smoothly.
    a. No motor stalling or groaning noises
    b. The bed probe collar reaches the low stop before the gear runs out of travel
    c. The gear travels all the way back and triggers the endstop.
    d. Check probe movement with the toolhead in 2-3 various positions across the XY plane.
3. Go to *Utilities > Bed Leveling > Run Auto Level* to make sure the bed leveling process completes without errors or weird noises from the bed probe motor.

4. Run *Utilities > Bed Leveling > Run Nozzle Offset*, as your nozzle offset may have changed. Again, make sure it completes without errors or weird noises.

REINSTALLATION

Follow THESE INSTRUCTIONS to reinstall the rear panel.

STILL NEED HELP?

Contact our support team:

support@fusion3design.com

https://www.fusion3design.com/contact-support/

877-452-0010 x2